Standards-based Approach to Teaching and Learning

Through Research and Best Practice

Session Goals

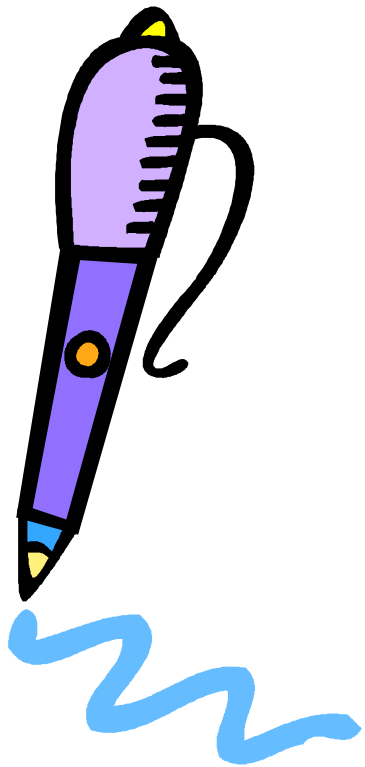
- Participants will understand standards-based education.
- Participants will understand evidence-based education (EBE).
- Participants will learn about best practices and research-based strategies.

HO, p. 1

Activity

Quick write…

What is standards-based education?



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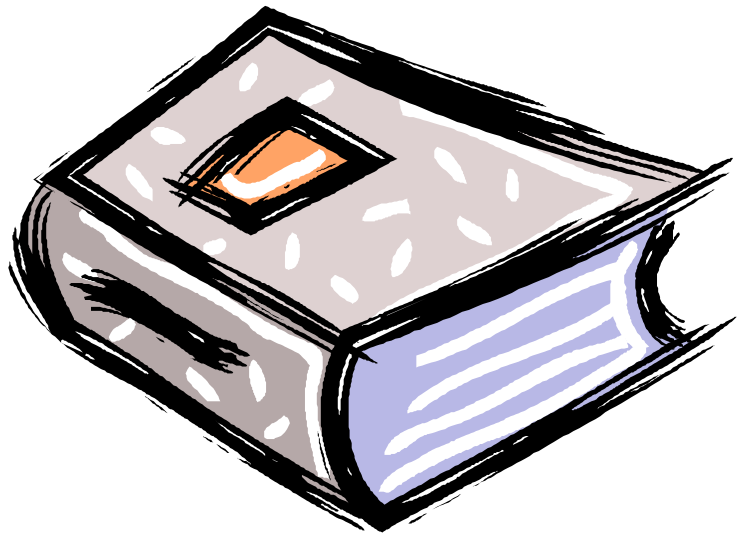
Report Out

Take a couple of minutes to share your thoughts about standards-based education with someone sitting next to you.

Report out.

What is standards-based education?

Standards-based education simply means that teaching and learning are predicated on students' achieving agreed-upon standards.



Key Elements

First, the school must set high standards that determine what all students need to know and be able to do.

Second, staff must do whatever it takes for as long as it takes in order to make sure that all students achieve the standards.

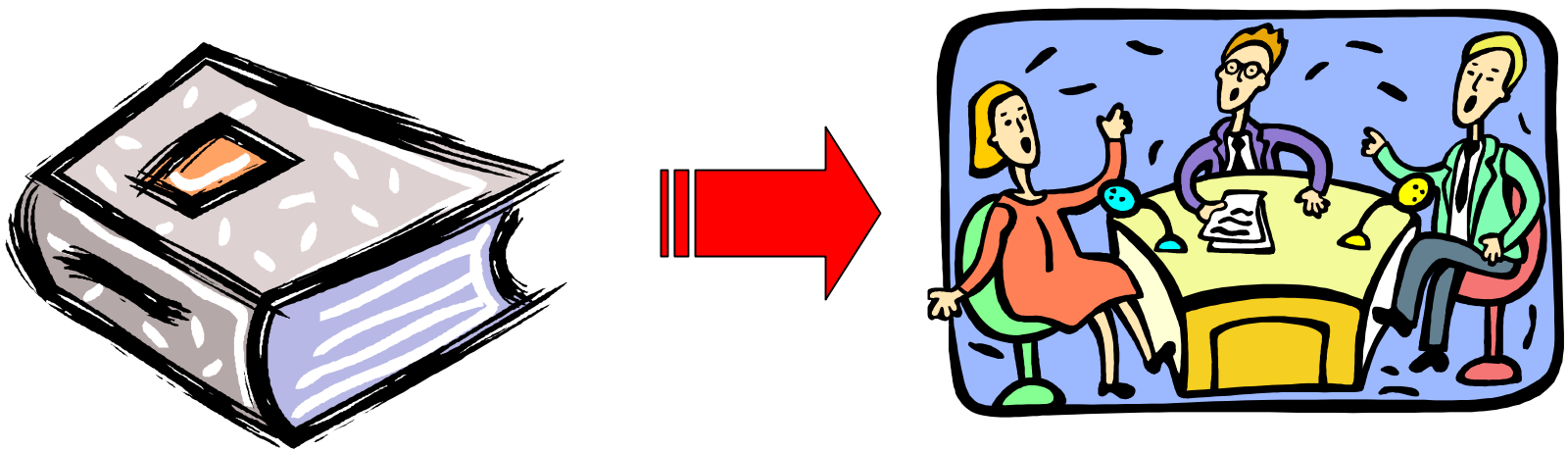
Key Elements

Third, student achievement must be assessed by measuring it against the standards.

Fourth, instruction and curriculum must be continually adjusted until all students reach or exceed the standards.

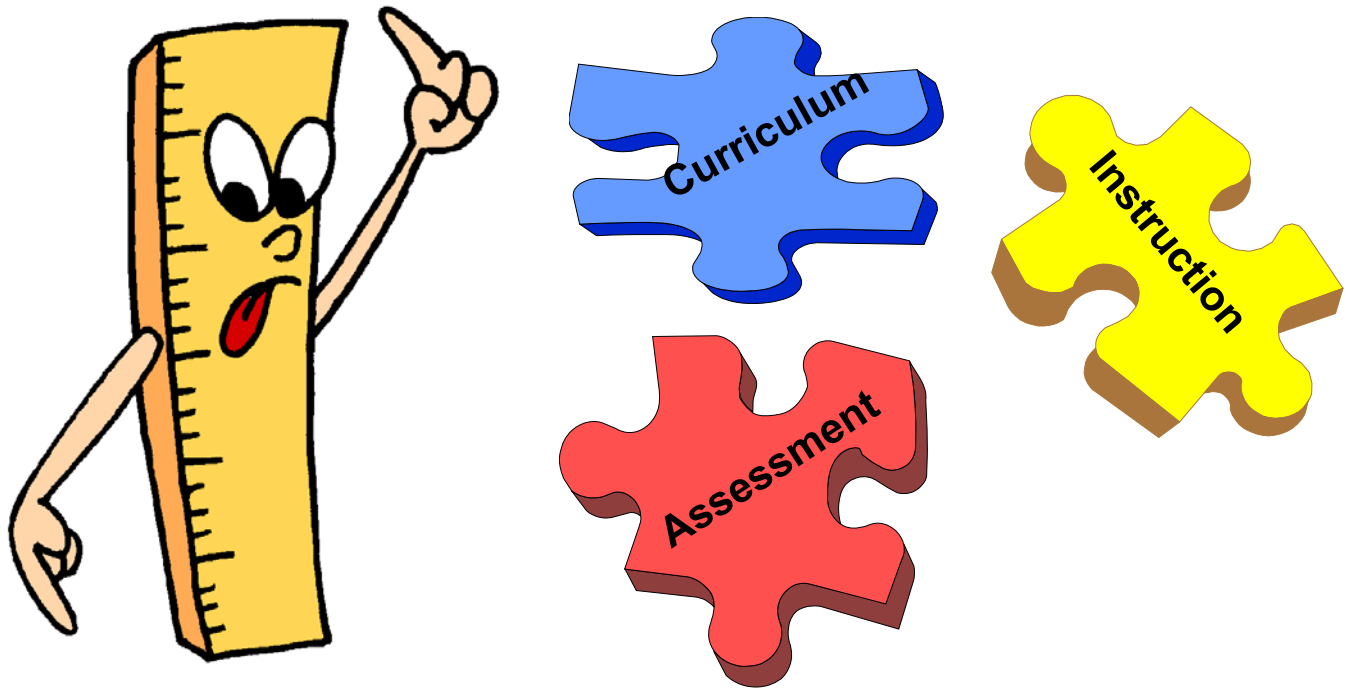
What is standards-based practice?

A movement from **document** to **dialogue** and **action**.



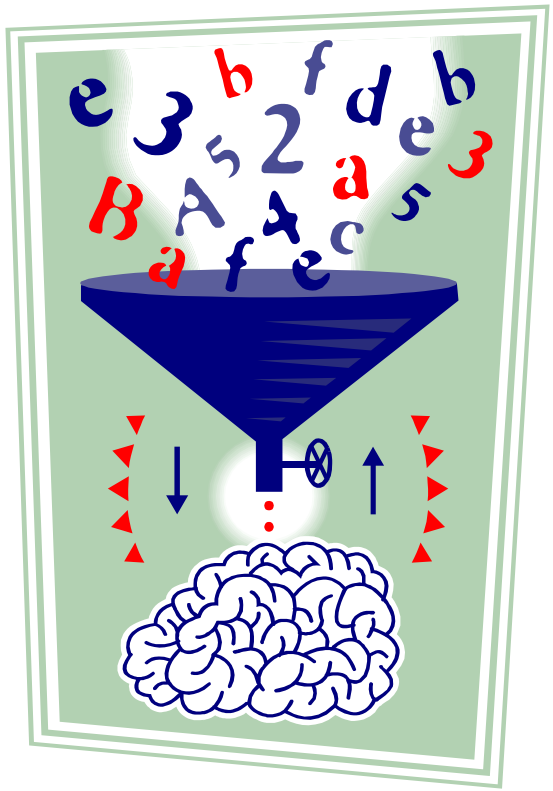
A word about alignment…

Curriculum, instruction, and assessments need to be aligned with standards!



Student Academic Goals

1. What do we want students to know and be able to do . . . and how well?



Format of Standards

- Standard
- Strand
- Concept
- Performance Objective

Language Arts Standards

- Standard 1: Reading
- Standard 2: Writing
- Standard 3: Listening/Speaking
- Standard 4: Viewing/Presenting

Standard 1: Reading

- Strand 1: Reading Process
- Strand 2: Comprehending Literary Text
- Strand 3: Comprehending Informational Text

Standard 1: Reading
Strand 1: Reading Process

- Concept 1: Print Concepts
- Concept 2: Phonemic Awareness
- Concept 3: Phonics
- Concept 4: Vocabulary
- Concept 5: Fluency
- Concept 6: Comprehension

Standard 1: Reading
Strand 1: Reading Process

- Concept 6: Comprehension Strategies – Employ strategies to comprehend text.

Unpacking Concepts

- What would students have to know and be able to do (performance objective) to understand this concept?
- Are there any prior skills and knowledge that a student must know to understand this concept?
- Could this all happen at one grade level or do pieces have to happen at earlier grade levels?

Standard 1: Reading
Strand 1: Reading Process

- Concept 6: Comprehension Strategies
  - Performance Objectives – Grade 3
    - PO 1. Predict events and actions, based upon prior knowledge and text features.
    - PO 2. *Compare a prediction about an action or event to what actually occurred within a text*.
    - PO 3. *Ask relevant questions in order to comprehend text*.

Italics denotes PO learned in earlier grade.

Standard 1: Reading
Strand 1: Reading Process

- Concept 6: Comprehension Strategies
  - Performance Objectives – Grade 3
    - PO 4. Answer clarifying questions in order to comprehend text.
    - PO 5. Extract information from graphic organizers (e.g., webs, Venn diagrams, flow charts) to comprehend text.
    - PO 6. Connect information and events in text to related text and sources.

Ongoing Assessment

2. How will we know that they know it?

AIMS
Grade 3 Reading
Performance Level Descriptors

- Use word recognition and decoding strategies
- Apply comprehension strategies
- Identify facts, main idea, and sequence events
- Analyze literary elements
- Follow a list of directions and evaluate those directions for clarity

AIMS
Grade 3 Reading
Performance Level Descriptors

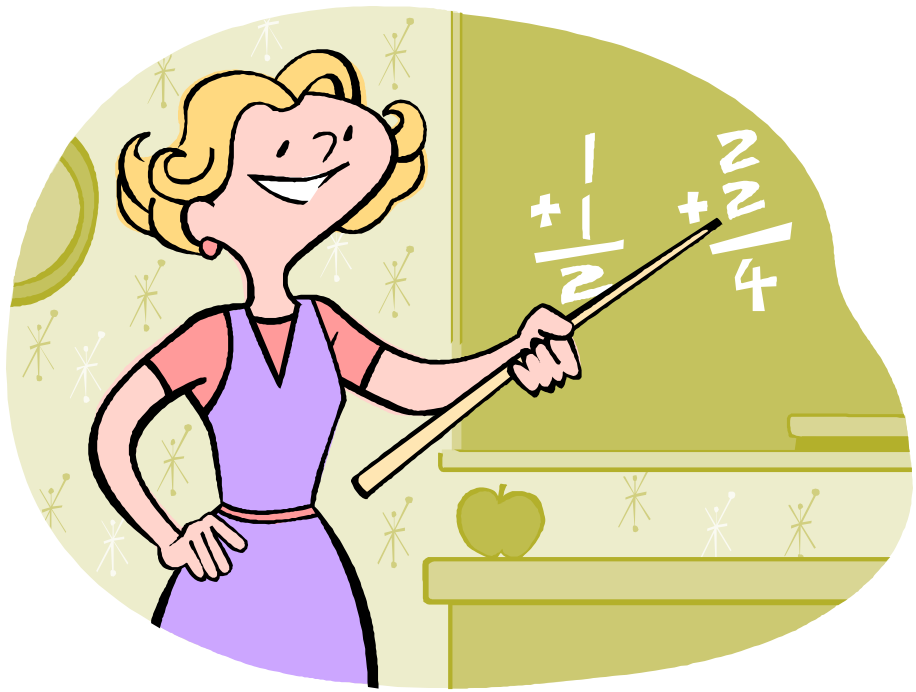
- Apply comprehension strategies
  - Draw conclusions from stated information
  - Summarize
  - Predict events, actions, and behaviors based on text

Assessment Questions

- Will you wait until the AIMS assessment to check for understanding?
- Does the AIMS assessment measure every performance objective in every standard?
- What ongoing assessments can you use to make sure that students know what they need to know?

Intervention

3. What will we do about it if they don't know it?



Intervention Strategies

Saying it louder doesn't cut it! You need to have a tool box filled with strategies to address individual needs of your students.

Traditional Practice *vs.* Standards-based Practice

Traditional Practice	Standards-based Practice
Choose a topic	Select standards, strands, and/or concepts
Plan instruction	Design assessments
Teach	Plan instructional activities
Test	Provide learning opportunities
Grade test	Score and analyze student work
Give feedback	Share results
Move on to new topic	Use data to inform instruction
	Begin again with another standard

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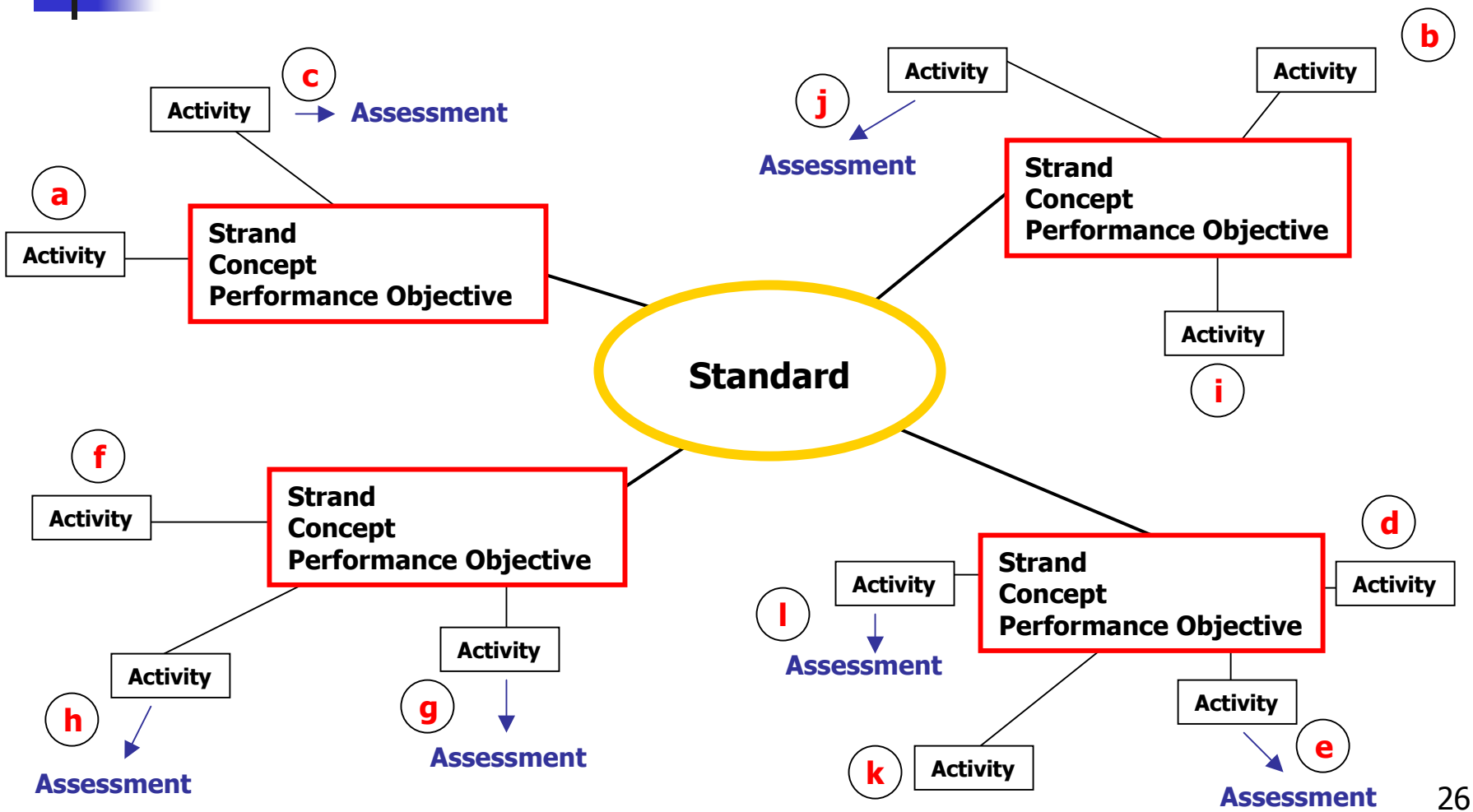
Designing Units of Study



Activity

Team work…

With your school team or table team, review the four key elements and respond to the questions.

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Report Out

- How has your school identified what all students need know and be able to do?
- What are you doing to help all students meet the standards?
- What measurements help you to prove that all students are meeting the standards?
- How have you modified instruction or curriculum to help all students meet or exceed the standards?

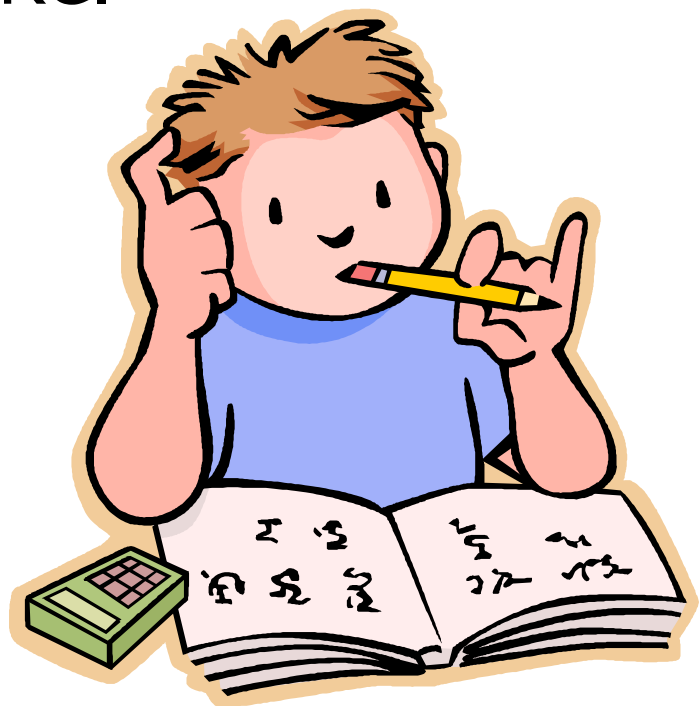
Evidence-based Education

This is a good place to insert the Whitehurst Evidence-based Education PowerPoint.

How People Learn

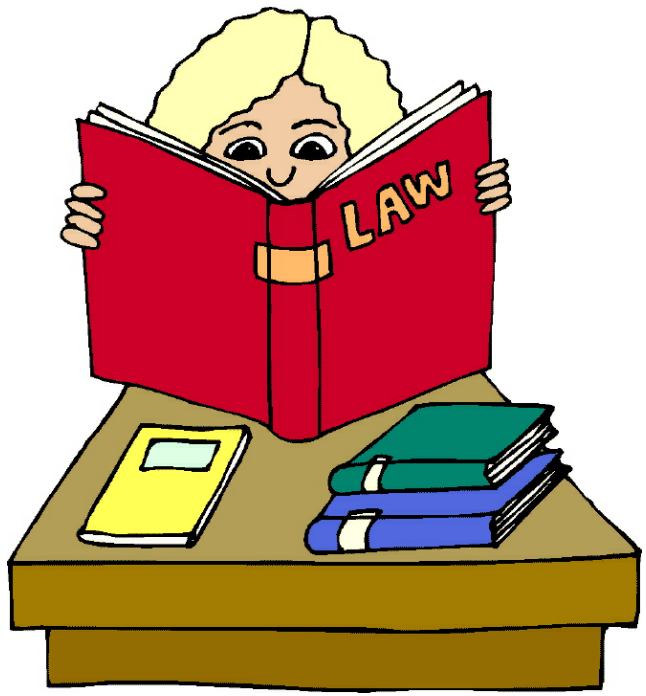
National Research Council, 1999

Six findings in *How People Learn* from NRC.



Research Finding 1

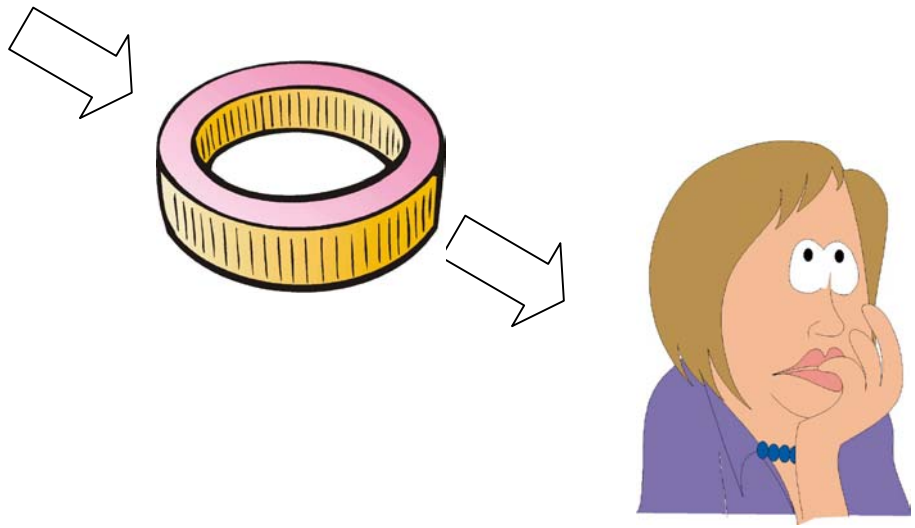
Understanding is more than knowing facts.



Research Finding 2

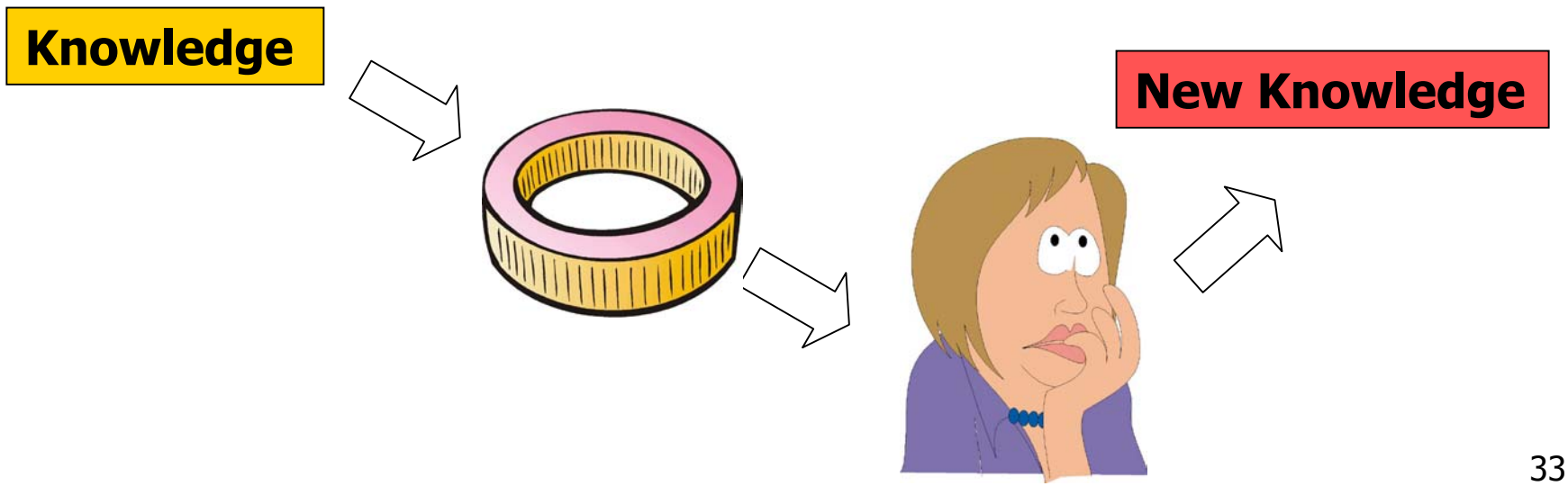
Students build new knowledge and understanding on what they already know and believe.

Knowledge



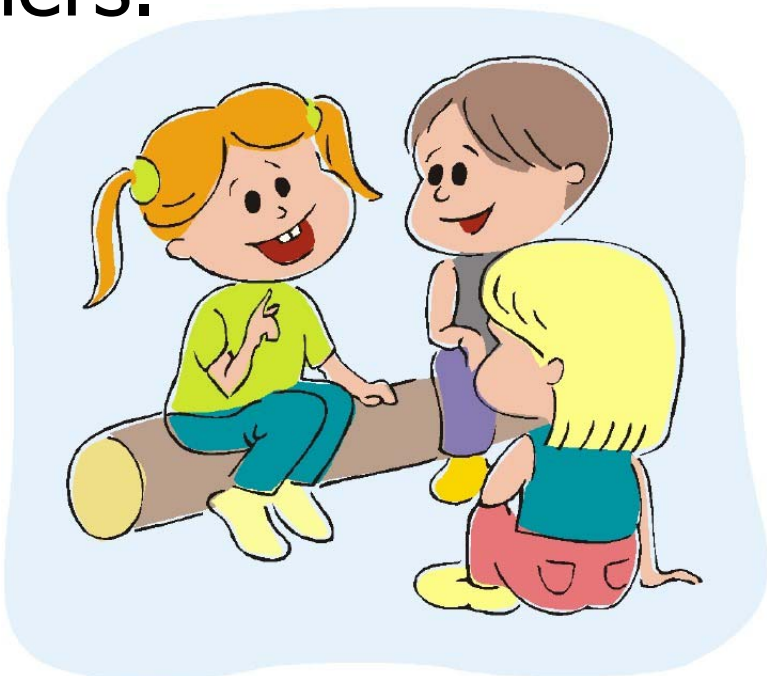
Research Finding 3

Students formulate new knowledge by modifying and refining their current concepts and by adding new concepts to what they already know.



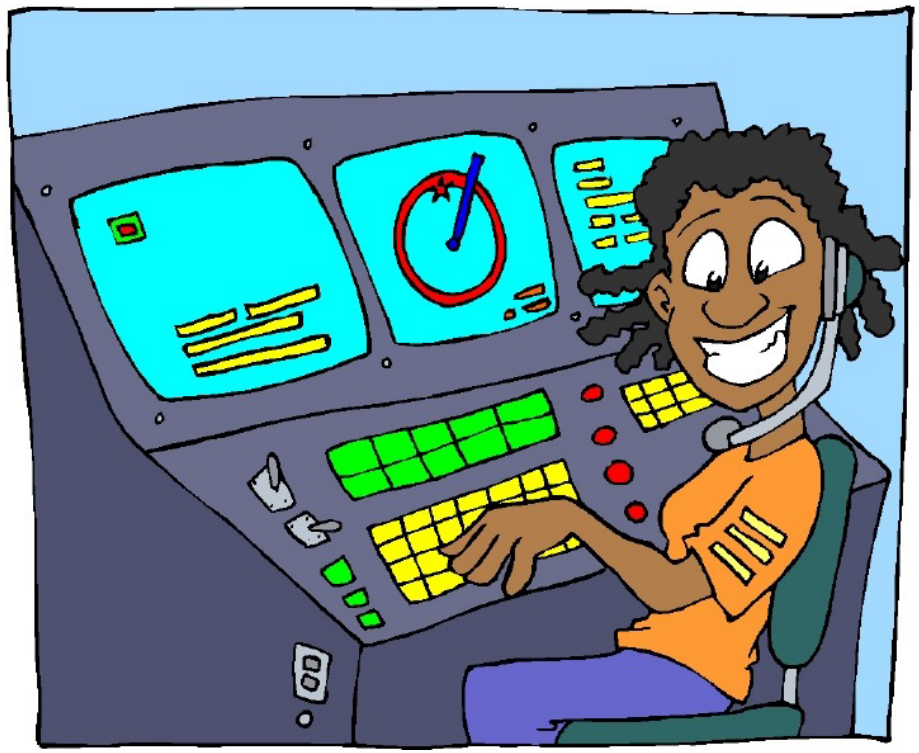
Research Finding 4

Learning is mediated by the social environment in which learners interact with others.



Research Finding 5

Effective learning requires that students take control of their own learning.



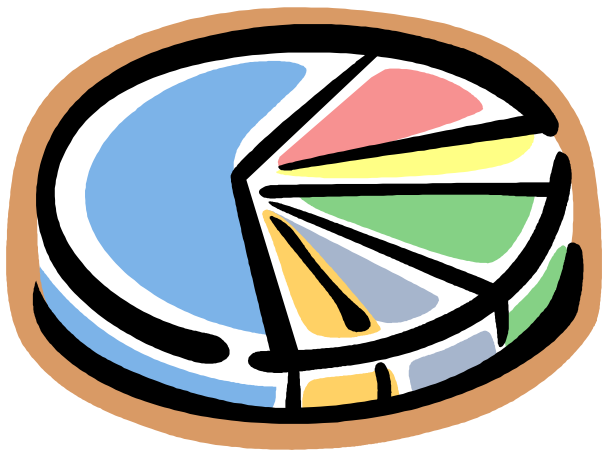
Research Finding 6

The ability to apply knowledge to novel situations, that is, transfer of learning, is affected by the degree to which students learn with understanding.

Activity

Create a graph…

Create a pie graph that illustrates the top four influences (by percentage) on learning.



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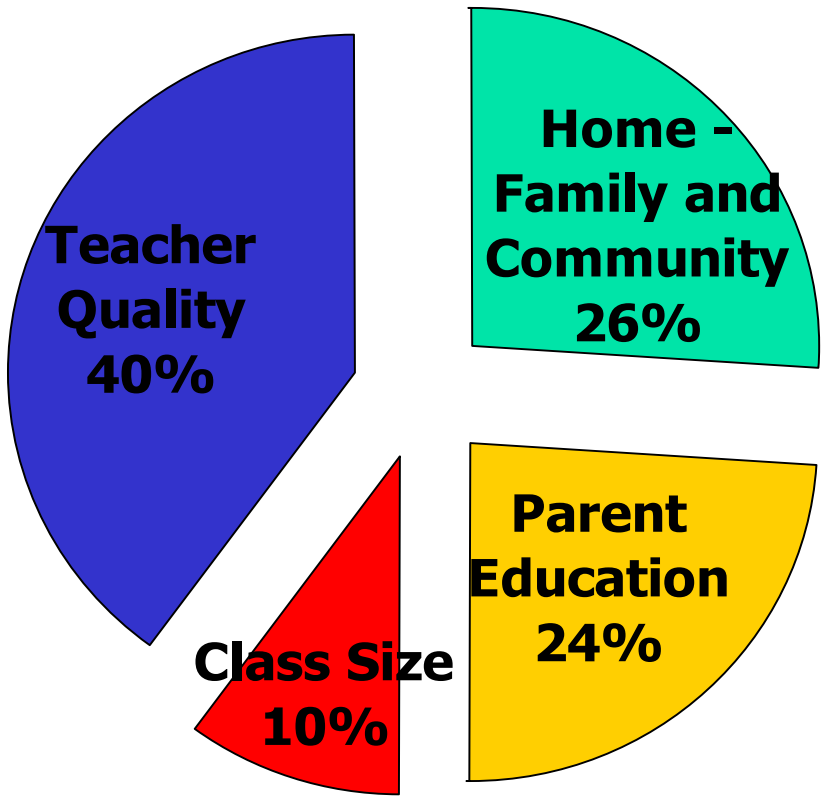
Report Out

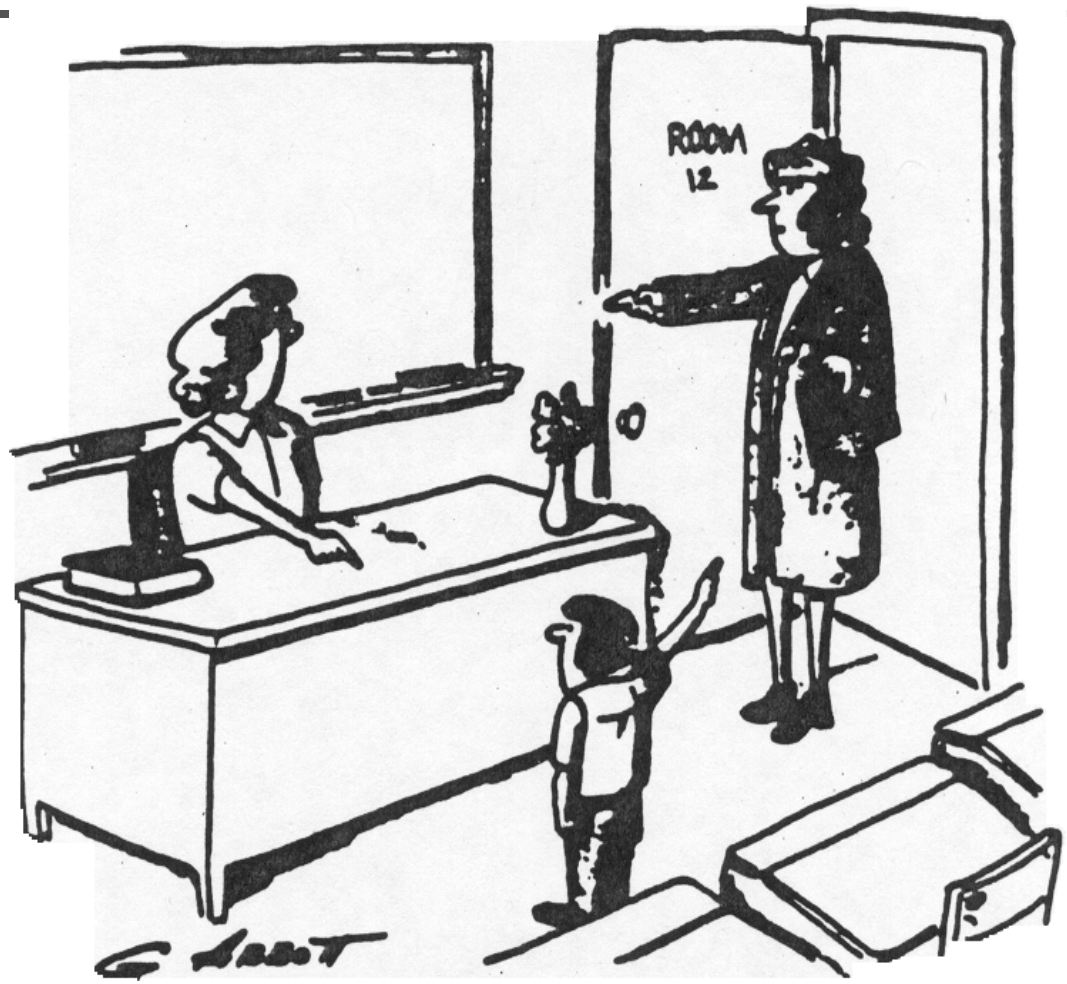
What influences learning the most?

Influences on Learning

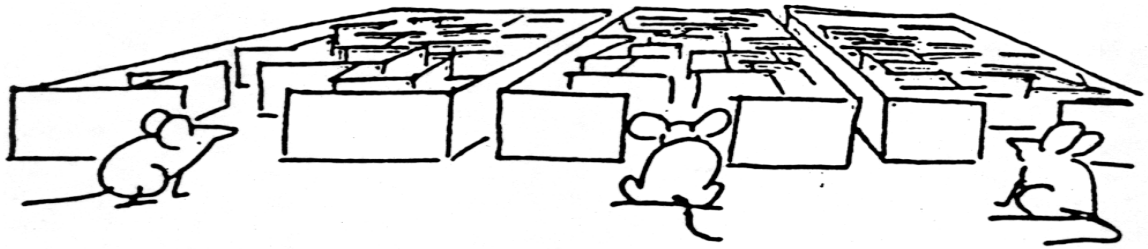
Darling-Hammond and Ball, 1997

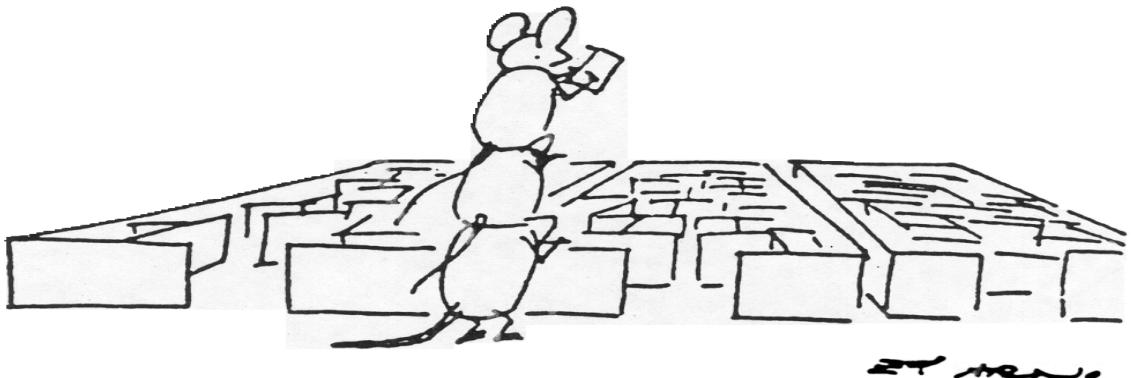


Yea, but…



Teamwork with No Blame, No Shame, No Excuses





Activity

Jigsaw this reading…

What Do We Mean by Best Practice?

Home Group:

1 – HO, page 19

2 – HO, page 20

3 – HO, pages 21-22

Expert Group

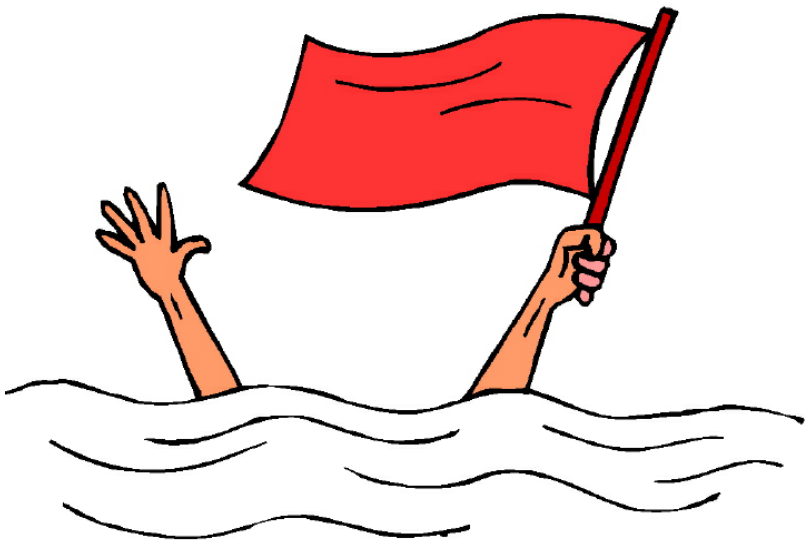
- Focus on these questions:
  1. How does best practice relate to standards-based education and evidence-based education?
  2. Which principles, assumptions, or theories are most evident in schools? Where do we need to spend more energy?
  3. Which "less" things are you truly seeing less of and which "more" things are you truly seeing more of?

Home Group

- Share what you learned…
  1. How does best practice relate to standards-based education and evidence-based education?
  2. Which principles, assumptions, or theories are most evident in schools? Where do we need to spend more energy?
  3. Which "less" things are you truly seeing less of and which "more" things are you truly seeing more of?

Help!

How do I know what kinds of strategies are best practices?



Just a few suggestions…

- Stay current.
  - Join professional organizations.
  - Read professional books, journals, and news articles.
  - Etc.
- And make sure that they are research-based!

Research-based Strategies

Effect Sizes and Achievement

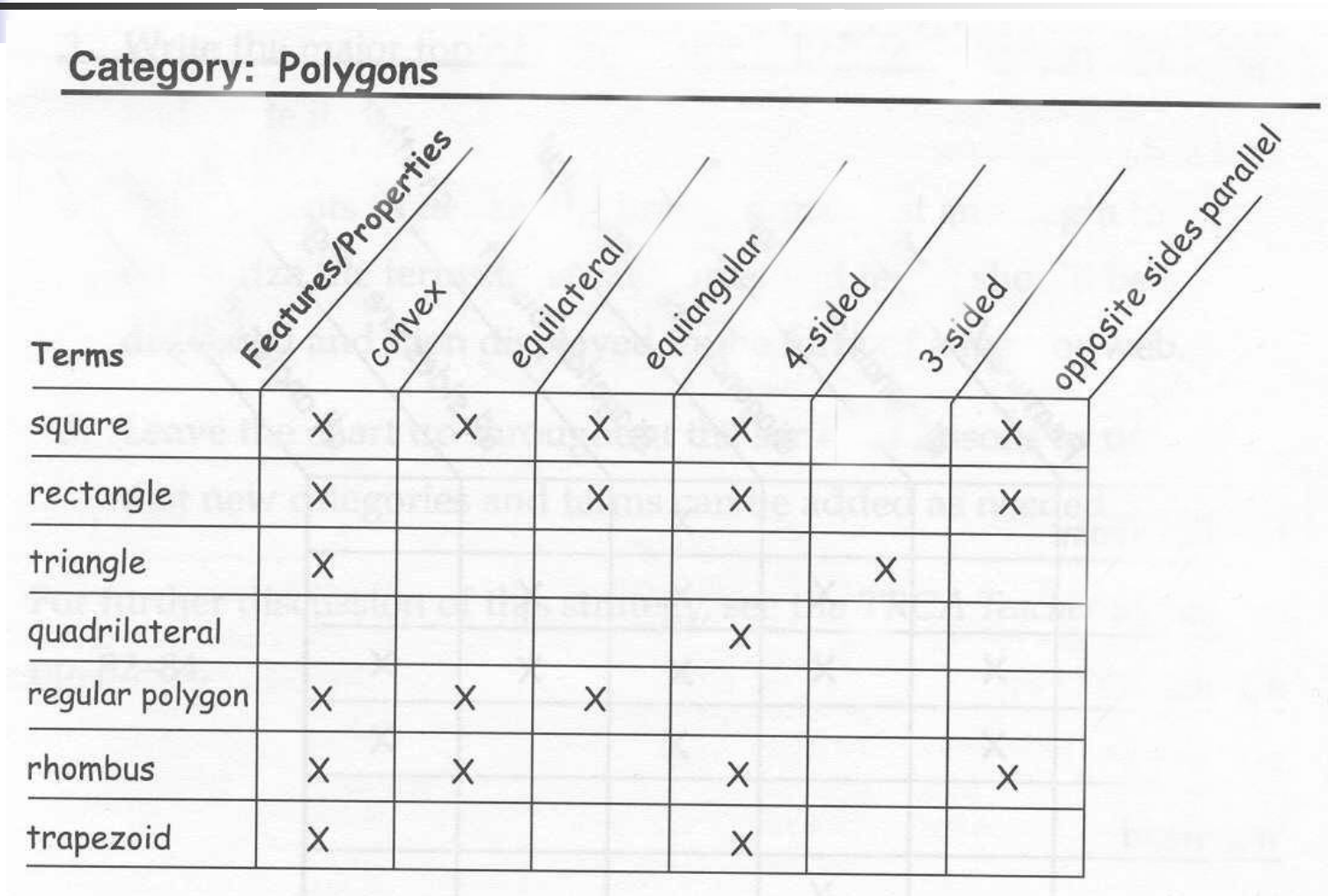
Marzano, et al., 2001

Identifying similarities and differences	1.61
Summarizing and note taking	1.00
Reinforcing effort and providing recognition	.80
Homework and practice	.77
Nonlinguistic representations	.75
Cooperative learning	.73
Setting objectives and providing feedback	.61
Generating and testing hypotheses	.61
Questions, cues, and advance organizers	.59

Identifying Similarities and Differences

- What does it involve?
  - Identifying similarities and differences
  - Understanding the similarities and differences well enough to use the knowledge
- Examples
  - Comparing
  - Classifying
  - Creating metaphors
  - Creating analogies

Identifying Similarities and Differences



Category: Polygons

Terms \ Features/Properties	convex	equilateral	equiangular	4-sided	3-sided	opposite sides parallel
square	X	X	X	X		X
rectangle	X		X	X		X
triangle	X				X	
quadrilateral				X		
regular polygon	X	X	X			
rhombus	X	X		X		X
trapezoid	X			X		

Summarizing and Note Taking

Summarizing

- What does it involve?
  - Deleting trivial and redundant material.
  - Substituting super ordinate terms for lists.
  - Selecting or inventing a topic sentence.
- Examples
  - Storytelling
  - Writing for understanding

Note Taking

- What does it involve?
  - Summarizing
  - Adding and revising
  - Reviewing
  - Including information
- Examples
  - Writing for understanding

Summarizing

FIGURE 3.2

Exercise in Summarizing

A

The Photographic Process

The word *photography* comes from the Greek word meaning "drawing with light.". . . Light is the most essential ingredient in photography. Nearly all forms of photography are based on the fact that certain chemicals are *photosensitive*—that is, they change in some way when exposed to light. Photosensitive materials abound in nature; plants that close their blooms at night are one example. The films used in photography depend on a limited number of chemical compounds that darken when exposed to light. The compounds most widely used today are silver and chemicals called *halogens* (usually bromine, chlorine, or iodine).

B

Macro-structure of the Photographic Process

~~The word *photography* comes from Greek words and means "drawing with light.". . .~~ Light is the most essential ingredient in photography. ~~Nearly all forms of photography are based on the fact that certain chemicals are *photosensitive*—that is, they change in some way when exposed to light. Photosensitive materials abound in nature; plants that close their blooms at night are one example.~~ Photography depends on chemical crystals that ~~The films used in photography depend on a limited number of chemical compounds that~~ darken when exposed to light. ~~The compounds most widely used today are silver and chemicals called *halogens* (usually bromine, chlorine, or iodine).~~

Source: From "Photography." In *Microsoft Encarta Encyclopedia 99*, CD-ROM, Microsoft, 1999.

Reinforcing Effort and Providing Recognition

Effort

- What does it involve?
  - Recognizing the relationship between effort and achievement.
- Example
  - Effort and Achievement Rubrics

Recognition

- What does it involve?
  - Providing effective praise and recognition
- Example
  - Pause, prompt, and praise

Reinforcing Effort and Providing Praise

Effort and Achievement Rubrics for Science

Scale: 4 = excellent; 3 = good;
2 = needs improvement; 1 = unacceptable

Effort Rubric

4 I worked on my science assignment until it was completed. I pushed myself to continue working on the task even when difficulties arose, when a solution was not immediately evident, or when I had trouble understanding what an author was saying. I used obstacles that arose as opportunities to strengthen my understanding and skills beyond the minimum required to complete the assignment.

3 I worked on my science assignment until it was completed. I pushed myself to continue working on the task even when difficulties arose, when a solution was not immediately apparent, or when I had trouble understanding what an author was saying.

2 I put some effort into my science assignment, but I stopped working when difficulties arose, when a solution was not immediately evident, or when I had trouble understanding what an author was saying.

1 I put very little effort into my science assignment.

Achievement Rubric

4 I exceeded the objectives of the assignment.

3 I met the objectives of the assignment.

2 I met a few of the objectives of the assignment, but didn't meet others.

1 I did not meet the objectives of the assignment.

Homework and Practice

Homework

- What does it involve?
  - Identifying and communicating the purpose and outcome of the homework.
- Examples
  - Practice
  - Preparation or Elaboration

Practice

- What does it involve?
  - Mastering a skill
  - Adapting and shaping a skill
- Example
  - Reciprocal teaching

Homework and Practice

Strategy

Homework—Ugh!

Homework, as annoying as it is for some people, has been a part of American school life for as long as most people can remember. Although most students don't really like doing homework, there are some important benefits to it, and that is why teachers usually assign it.

Take a minute to list every complaint you have about doing homework:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

(Please feel free to use another paper if you need more space.)

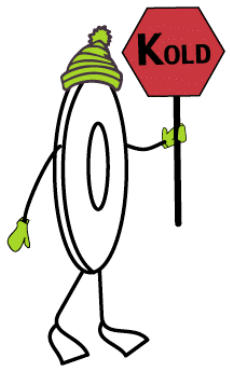
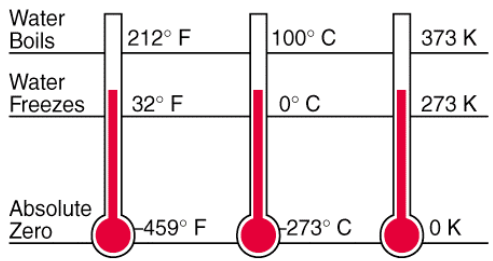
Okay, now think of as many really good reasons as you can to explain how homework helps you learn. We've supplied three. Try to give us a few more.

1. Homework allows you to get a chance to practice a newly learned skill.
2. Homework allows you to check your understanding of a new skill and ask questions about anything you are unclear about before you are tested on it.
3. Homework allows you to build the habit of working independently to solve problems.
4. _____

Nonlinguistic Representations

- What does it involve?
  - Creating graphic representations
  - Making physical models
  - Generating pictures or pictographs
  - Engaging in kinesthetic activity
- Examples
  - Simulations
  - Role Playing
  - Rhythm, Rhyme, and Raps
  - Visuals and Graphic Organizers
  - Mnemonics

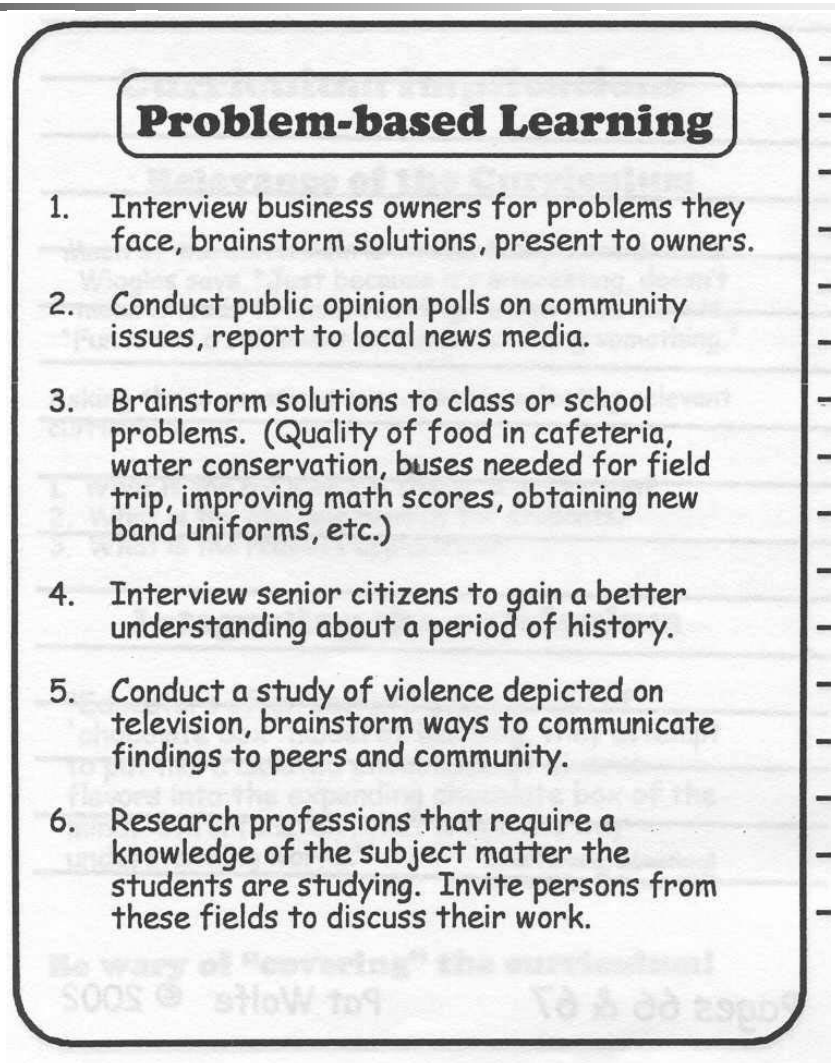
Nonlinguistic Representation

Vocabulary Term	**Visual Representation**
Absolute zero	
Definition	**Personal Association or Characteristic**
Absolute zero is the point at which oscillations of atoms are as slow as possible.	

Cooperative Learning

- What does it involve?
  - Positive interdependence
  - Face-to-face promotive interaction
  - Individual and group accountability
  - Interpersonal and small group skills
  - Group processing
- Examples
  - Projects
  - Problem-based learning
  - Hands-on learning
  - Service learning

Cooperative Learning



Problem-based Learning

1. Interview business owners for problems they face, brainstorm solutions, present to owners.
2. Conduct public opinion polls on community issues, report to local news media.
3. Brainstorm solutions to class or school problems. (Quality of food in cafeteria, water conservation, buses needed for field trip, improving math scores, obtaining new band uniforms, etc.)
4. Interview senior citizens to gain a better understanding about a period of history.
5. Conduct a study of violence depicted on television, brainstorm ways to communicate findings to peers and community.
6. Research professions that require a knowledge of the subject matter the students are studying. Invite persons from these fields to discuss their work.

Setting Objectives and Providing Feedback

Objectives

- What does it involve?
  - Narrowing the focus
  - Making it personal
- Examples
  - Student goals
  - Contracts

Feedback

- What does it involve?
  - Acknowledging what is correct and what is not correct.
  - Giving timely feedback
  - Giving specific feedback
- Example
  - Student-led feedback

Setting Objectives and Providing Feedback

FIGURE 8.5

Rubrics for Providing Feedback

Scale: 4 = excellent; 3 = good; 2 = needs improvement; 1 = unacceptable; 0 = no judgment possible

A: General Rubric for Information

4 The student has a complete and detailed understanding of the information important to the topic.

3 The student has a complete understanding of the information important to the topic but not in great detail.

2 The student has an incomplete understanding of the topic and/or misconceptions about some of the information. However, the student maintains a basic understanding of the topic.

1 The student's understanding of the topic is so incomplete or has so many misconceptions that the student cannot be said to understand the topic.

0 No judgment can be made about the student's understanding of the topic.

B: Generic Rubric for Processes and Skills

4 The student can perform the skill or process important to the topic with no significant errors and with fluency. Additionally, the student understands the key features of the process.

3 The student can perform the skill or process important to the topic without making significant errors.

2 The student makes some significant errors when performing the skill or process important to the topic but still accomplishes a rough approximation of the skill or process.

1 The student makes so many errors in performing the skill or process important to the topic that he or she cannot actually perform the skill or process.

0 No judgment can be made about the student's ability to perform the skill or process.

Generating and Testing Hypotheses

- What does it involve?
  - Applying knowledge
  - Reasoning
    - Deductive
    - Inductive
  - Explaining
- Examples
  - Decision Making
  - Problem Solving
  - Investigating

Generating and Testing Hypotheses

1. Observe something of interest to you and describe what you observe.
2. Apply specific theories or rules to explain what you have observed.
3. Based on your explanation, generate a hypothesis to predict what would happen if you applied the theories or rules to what you observed or to a situation related to what you observed.
4. Set up an experiment or engage in an activity to test your hypothesis.
5. Explain the results of your experiment or activity. Decide if your hypothesis was correct and if you need to conduct additional experiments or activities or if you need to generate and test an alternative hypothesis.

Cues, Questions, and Advance Organizers

- What does it involve?
  - Activating prior knowledge
  - Focusing on what is important
  - Probing for deeper thinking
  - Waiting for responses
- Examples
  - K-W-Ls
  - Anticipation Guides

Cues, Questions, and Advance Organizers

Anticipation Guide
Statistics

Directions: In the column labeled *Me*, place a check next to any statement with which you agree. After reading the text, compare your opinions about those statements with information in the text.

Me	Text	
_____	_____	1. There are several kinds of averages for a set of data.
_____	_____	2. The mode is the middle number in a set of data.
_____	_____	3. Range tells how far apart numbers are in a set of data.
_____	_____	4. Outliers are always ignored.
_____	_____	5. Averages are always given as percents.

Note: Basic format only from *Teaching Reading in Content Areas*, by H. Herber, 1978, Englewood Cliffs, NJ: Prentice Hall. Copyright 1978 by Prentice Hall.

Activity

Complete this analogy…

Instructional strategies are to teachers as _____ are to _____.